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The Gelechiidae of the Longarini salt marsh in the “Pantani della Sicilia Sud-Orientale” nature reserve in southeastern Sicily, Italy (Lepidoptera: Gelechiidae)

S. Bella & O. Karsholt

Abstract

The authors report the results of field research on Gelechiidae from the “Pantano Longarini” salt marsh (southeastern Sicily). The area is located inland to the “Pantani della Sicilia Sud-Orientale” regional nature reserve. A total of twenty-four species are recognized; among the recorded taxa *Scrobipalpa peterseni* (Povolný, 1965) is new to Europe, *Scrobipalpa bigoti* (Povolný, 1973), *Scrobipalpa bradleyi* Povolný 1971, *Scrobipalpa spergulariella* (Chrétien, 1910) and *Scrobipalpa superstes* Povolný, 1977 are new records for Sicily and Italy, and *Syncopacma sangiella* (Stainton, 1863) and *Scrobipalpa monochromella* (Constant, 1895) are new for the Sicilian fauna.

KEY WORDS: Lepidoptera, Gelechiidae, salt marsh, Sicily, Italy.

Los Gelechiidae del saladar Longarini en la Reserva Natural de los “Pantani della Sicilia Sud-Orientale” en el sudeste de Sicilia, Italia (Lepidoptera: Gelechiidae)

Resumen

Los autores informan sobre los resultados de la investigación de campo sobre Gelechiidae del saladar “Pantano Longarini” (sudeste de Sicilia). La zona está ubicada hacia el interior de la reserva natural regional de los “Pantani della Sicilia Sud-Orientale”. Se registran un total de veinticuatro especies; entre ellas el taxon *Scrobipalpa peterseni* (Povolný1965) es nuevo para Europa, *Scrobipalpa bigoti* (Povolný, 1973), *Scrobipalpa bradleyi* Povolný, 1971, *Scrobipalpa spergulariella* (Chrétien, 1910) y *Scrobipalpa superstes* Povolný, 1977, son nuevos registros para Sicilia e Italia y *Syncopacma sangiella* (Stainton, 1863) y *Scrobipalpa monochromella* (Constant, 1895) son nuevos para la fauna siciliana.

PALABRAS CLAVE: Lepidoptera, Gelechiidae, saladar, Sicilia, Italia.

Introduction

The Sicilian fauna is of considerable interest for its complex paleogeographic history and its central position in the Mediterranean basin. The micro-lepidopterans of the island are now known to a satisfactory degree. In particular, with more than 4700 species worldwide, the Gelechiidae is one of the largest families of micromoths both in Europe and on a global scale (HUEMER & KARSHOLT, 2010).

The checklist of the Italian fauna includes 365 taxa (species and subspecies) of this family (10 endemic species), of which 120 species are known for Sicily (KARSHOLT, 2011). Only a few contributions for this family from Sicily have been published recently (ROMANO & ROMANO,

1995; BELLA, 2008). Some records from the genus *Scrobipalpa* listed below were also mentioned by KARSHOLT & HUEMER, 2010, and we refer also to that publication for illustrations of the genitalia of the species of Gnorimoschemini treated below.

The “Pantano Longarini” wetland is the largest humid area in a system of salt marshes located inland of the Ambrac coast (5 km length) in the southeastern corner of Sicily. The Pantano Longarini area is included in the “Pantani della Sicilia Sud-Orientale” regional nature reserve; its territory also forms part of the Site of Community Importance (SCI) ITA090003 under the Habitats Directive 92/43/EEC, and of the Special Protection Area (SPA) ITA090029 under the Birds Directive 2009/147/EC. The protected area of 1385 hectares is situated between the towns of Pachino and Noto in the province of Syracuse, and Ispica in the province of Ragusa on the southeastern edge of the Hyblean calcareous plateau. The climate is typically Mediterranean, with mild winters and hot dry summers. The mean air temperatures range from 12° C in December and January to 26° C in July and August; the mean annual precipitation averages 385 mm, ranging from as little as 0 mm per month from June to August to as much as 60 mm per month from October to January, with consequent seasonal variations of water levels. According to BAGNOULS & GAUSSEN (1957), this climate is classified as Mediterranean-xerothermic. The environmental characteristics of the area depend strictly on the range of salinity: between 7‰ in December and 189‰ in August (AMORE *et al.*, 1997).

The great natural importance of this area is due to its considerable environmental diversity (dunal complexes, rocky coasts, salt marshes, garrigues, streams, etc.). In particular, together with the nearby Vendicari lagoons, these areas provide a regular stopover for birds migrating from northern Europe to northern Africa.

The vegetation is characterised by the occurrence of several phytocoenoses dominated by halophilous and psammophilous species belonging to *Salicornia*, *Arthrocnemum*, *Suaeda*, *Inula*, *Limonium*, *Phragmites*, *Juncus*, *Cyperus*, *Holoschoenus*, *Euphorbia*, *Plantago*, *Medicago*, *Ononis*, *Ephedra*, *Halimione*, *Otanthus*, *Juniperus*, and others. The xerophilous and Mediterranean plant communities are characterized by such species as *Cerantonia siliqua* L., *Olea europaea sylvestris* Brot., *Pistacia lentiscus* L., *Myrtus communis* L., *Teucrium fruticans* L., *Prasium majus* L., *Smilax aspera* L., *Capparis spinosa* L., *Coridothymus capitatus* Rchb. f., *Ficus carica caprificus* L., *Phillyrea angustifolia* L., *Rhamnus alaternus* L., *Pyrus amygdaliformis* L., *Calicotome infesta* (Presl) Guss., *Thymelaea hirsuta* (L.) Endl., *Sarcopoterium spinosum* (L.) Spach, *Artemisia arborescens* L., *Chamaerops humilis* L., *Foeniculum vulgare* Mill., and others. Permanent streams are dominated by plant communities comprising *Tamarix africana* Poir., *T. gallica* L., *Arundo donax* L., *Typha latifolia* L., *Carex*, *Cyperus*, *Holoschoenus*, and others (BRULLO & FURNARI, 1971).

These ecosystems, now rare throughout the Mediterranean basin, are often threatened by anthropogenic activities. In general, the arthropod fauna of these peculiar biotopes is little investigated, but for its protection it is very important to increase our knowledge of its biodiversity. Also, Lepidoptera have received only little attention from researchers.

The present contribution is based on the examination of material recently collected by the first author as part of a pluriannual research project to study the lepidopteran fauna of the residual wetland areas of Sicily. It follows specific previous papers on micromoths (BALDIZZONE *et al.*, 1999; BASSI *et al.*, 1999; TREMATERRA *et al.*, 1999; BELLA, 2007) and on macro-lepidopterans (BELLA *et al.*, 1996; PARENZAN *et al.*, 1998; BELLA *et al.*, 1999) of the Pantano Longarini salt marsh.

Material and methods

The survey was based on monthly observations conducted by the first author in 1995-1997; some specimens collected by O. Karsholt, S. Bella, M. Fibiger and G. Jeppesen in 2002 and 2006 are also included. The sampling site was chosen next to the marsh shore (36° 42' N, 15° 01' E; 2 m a.s.l.). Moths were attracted using a generator-powered 160 Watt mercury vapour lamp and collected with a butterfly net. Nightly sampling was carried out from sunset until ca. 4 a.m.

The specimens were identified through examination of the genital structures. The studied specimens are stored in S. Bella's collection and in the collection of ZMUC. To avoid repetition, the collectors' names are reported only for material not collected by S. Bella.

For each species, catch date, bibliographic sources for general and Italian distribution, diffusion in Sicily, months of flight of the adult, and some notes on the biology are provided. Nomenclature and systematic order follow HUEMER & KARSHOLT (2010) and KARSHOLT *et al.* (2013).

Acronyms used in the text:

BELL - collection Salvatore Bella (Aci Catena, Sicily, Italy).

HH - genitalier slide Henning Hendriksen.

OK *et al.* - leg. O. Karsholt, S. Bella, M. Fibiger and G. Jeppesen.

ZMUC - Zoological Museum, University of Copenhagen, Denmark.

Faunistic results

GELECHIIDAE ANACAMPSINAE

Stomopteryx detersella (Zeller, 1847)

Material examined: 1 ♂, 17-XII-1995.

Distribution: Southern regions of Europe to the Caucasus and North Africa (ELSNER *et al.*, 1999).

Range in Italy: Known from many peninsular regions and Sicily (HUEMER & KARSHOLT, 1995). In Sicily, *S. detersella* is reported from Zappulla (Palermo) and Syracuse (MARIANI, 1938).

Biology: The larva feeds on *Eryngium campestre* L. (Apiaceae).

Stomopteryx basalis Staudinger, 1876

Material examined: 1 ♀, 6-VII-1995.

Distribution: Southern regions of Europe, Portugal, France, Corsica, Italy, Malta, Greece, Cyprus and Crete.

Range in Italy: Known from many peninsular regions and Sicily (HUEMER & KARSHOLT, 1995). In Sicily, *S. basalis* is reported from Capo d'Orlando (Messina) (MARIANI, 1938).

Biology: Host plant and early stages unknown; the adults have been observed in July.

Aproaerema anthyllidella (Hübner, [1813])

Material examined: 1 ♀, 6-VII-1995, gen. slide HH 3811 (BELL), 1 ♀, 17-XII-1995.

Distribution: Widely distributed in the Palearctic region to Korea and Japan (ELSNER *et al.*, 1999).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 2010). In Sicily *A. anthyllidella* is reported from Monreale, Zappulla (Palermo) and Syracuse (MARIANI, 1938).

Biology: Larvae on numerous Fabaceae such as *Anthyllis vulneraria* L., *Galega officinalis* L., *Onobrychis vicifolia* Scop., *Ononis spinosa* L., *O. repens* L., *Oxytropis pilosa* (L.) DC., *Phaseolus vulgaris* L., *Trifolium pratense* L., *T. repens* L., *Trigonella monspeliaca* (L.) Trautv., *Chamaecytisus*, *Chrysopsis*, *Coronilla*, *Dorycnium*, *Lathyrus*, *Lotus*, *Medicago*, *Melilotus* and *Vicia* (ELSNER *et al.*, 1999).

Syncopacma sangiella (Stainton, 1863)

Material examined: 4 ♀♀, 6-VII-1995, gen. slides HH 4019 (BELL), HH 4020 (BELL), HH 3810 (BELL); 1 ♂, 12-IX-2002, leg. OK *et al.* (ZMUC).

Distribution: This species is distributed in Europe to Asia Minor.

Range in Italy: Reported for the first time in Italy by KARSHOLT & HUEMER (1995) from Valle d'Aosta, Piedmont, Trentino Alto-Adige, Latium, Umbria, Basilicata and Sardinia. These are the first data for the species in Sicily.

Biology: The larva feeds on *Lotus corniculatus* L. (Fabaceae) (ELSNER *et al.*, 1999).

DICHOMERIDINAE

Dichomeris acuminatus (Staudinger, 1876)

Material examined: 1 ♀, 6-VII-1995.

Distribution: Widely distributed in the Mediterranean regions of Europe, including the larger Mediterranean islands. Throughout warmer regions of the Old World to Australia.

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995). In Sicily, *D. acuminatus* is reported from several localities near Palermo (MINÀ-PALUMBO & FAILLA-TEDALDI, 1889; MARIANI, 1938).

Biology: The larva feeds on different species of Fabaceae, in Europe especially on *Medicago sativa* L., *Trifolium repens* L. and *T. pratense* L. (ROBINSON *et al.*, 2010).

Dichomeris lamprostoma (Zeller, 1847)

Material examined: 1 ♀, 17-XII-1995.

Distribution: Distributed in southern Europe, Canary Islands, northern and southern Africa (KLIMESCH, 1984).

Range in Italy: Sardinia and Sicily (HUEMER & KARSHOLT, 1995). In Sicily, reported from Casteldaccia (Palermo) and Syracuse (MARIANI, 1938).

Biology: The larva feeds on *Convolvulus* and *Ipomoea* (Convolvulaceae) (ROBINSON *et al.*, 2010).

Helcystogramma lutatella (Herrich-Schäffer, 1854)

Material examined: 1 ♀, 20-VII-1996.

Distribution: This species is distributed in Europe to the Caucasus.

Range in Italy: Known from many peninsular regions and Sicily (HUEMER & KARSHOLT, 1995). In Sicily, reported from Monreale and Mezzojuso (Palermo) (MARIANI, 1938).

Biology: The larva feeds on *Calamagrostis epigejos* (L.) Roth, *Dactylis glomerata* L., *Elytrigia repens* (L.) Desv. ex Nevski and *Phragmites australis* (Cav.) Trin. ex Steud. (Poaceae) (ELSNER *et al.*, 1999).

ANOMOLOGINAE

ANOMOLOGINI

Metzneria torosulella (Rebel, 1893)

Material examined: 1 ♂, 7-V-1995.

Distribution: Tunisia, Canary Islands, Spain, Portugal, Croatia, Cyprus, Italy and Malta.

Range in Italy: Sardinia (HUEMER & KARSHOLT, 1995).

Biology: Host plant and early stages unknown; the adults have been observed in May.

Ptocheuusa paupella (Zeller, 1847)

Material examined: 1 ♂, 7-V-1995.

Distribution: Ireland, the United Kingdom, the Netherlands, Belgium, Austria, Switzerland, Germany, France, Iberian Peninsula, Italy, Croatia, Macedonia, Greece, Cyprus, Hungary, Russia and the larger Mediterranean islands and Canary Islands.

Range in Italy: Previously known from peninsular and insular regions (HUEMER &

KARSHOLT, 1995). In Sicily, *P. paupella* is reported from Monreale and Zappulla (Palermo) (MARIANI, 1938).

Biology: The host plants are *Inula conyza* (Griess.) DC., *I. montana* L., and *Pulicaria dysenterica* (L.) Bernh. (Asteraceae). Adults in two generations (ELSNER *et al.*, 1999).

Ornativulva plutelliformis (Staudinger, 1859)

Material examined: 1 ♀, 14-VIII-1996.

Distribution: Species widely distributed, from the Canary Islands to central Asia and North Africa (ELSNER *et al.*, 1999).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995). In Sicily, *O. plutelliformis* is reported from Zappulla (Palermo) (MARIANI, 1938).

Biology: Larvae on *Tamarix* spp. (Tamaricaceae) (ROBINSON *et al.*, 2010).

GELECHIINAE

GELECHIINI

Mirificarma eburnella ([Denis & Schiffermüller], 1775)

Material examined: 1 ♂, 7-V-1995, 1 ♀, 4-VI-1995; 1 ♂, 23-IV-1996.

Distribution: Europe except northern regions; Turkey, Middle East and North Africa; presumably introduced into the U.S.A. (California) (HUEMER & KARSHOLT, 1999).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 1999).

Biology: The host plants are *Medicago lupulina* L., *M. polymorpha* L., *M. sativa* L., *Trifolium hirtum* Hall, *T. repens* L., *Hippocrepis comosa* L. and *Vicia americana* Muhlenberg (Fabaceae). Adults occur from March to August, probably in two generations (HUEMER & KARSHOLT, 1999).

GNORIMOSCHEMINI

Scrobipalpa obsoletella (Fischer von Röslerstamm, 1841)

Material examined: 1 ♀, 12-IX-2002, leg. OK *et al.* (ZMUC).

Distribution: Widely distributed in Europe, ranging from Portugal to the southern Ural Mountains and from Scandinavia to the Mediterranean, but mainly occurring along the coasts. Outside Europe recorded from Turkey and Iran to Asian Russia and Mongolia (HUEMER & KARSHOLT, 2010).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 2010).

Biology: The larval stage has been observed gregariously in the stem of host plant, especially on *Atriplex glabriuscula* Edmondston, *A. halimus* L., *A. littoralis* L., *A. tatarica* L. and *Chenopodium* spp. (Chenopodiaceae). The larva occurs in two overlapping generations, from June to September. Hibernation takes place in the pupal stage. The adult occurs in May and from July to August; in the north the species is univoltine (HUEMER & KARSHOLT, 2010).

Scrobipalpa bigoti (Povolný, 1973) (Fig. 1)

Material examined: 7 ♂♂, 3 ♀♀, 12-IX-2002, leg. OK *et al.*, gen. slide HH 3786 (ZMUC).

Distribution: Known from a few localities in Spain, southern France, Greece, Cyprus and Tunisia (HUEMER & KARSHOLT, 2010).

Range in Italy: This record is the first for the Italian fauna (HUEMER & KARSHOLT, 2010).

Biology: The species is recoverable in halophytic habitats. Host plant and early stages unknown; the adults have been collected from April to June and in September.

Scrobipalpa superstes Povolný, 1977

Material examined: 5 ♂♂, 1 ♀, 12-IX-2002, leg. OK *et al.*, gen. slides HH 3789, 3790, 3791 (ZMUC).

Distribution: Only known from Portugal, southern Spain and southern France.

Range in Italy: Records for Sicily and Sardinia are the first in Italy (HUEMER & KARSHOLT, 2010).

Biology: Host plant and early stages unknown, the adults have been observed in May, June, September and October.

Scrobipalpa bradleyi Povolný 1971 (Fig. 2)

Material examined: 1 ♂, 1 ♀, 14-VIII-1996, 1 ♀, 15-IX-1996; 2 ♂♂, 25 ♀♀, 12-IX-2002, leg. OK *et al.*, gen. slides HH 3782, HH 3783 (ZMUC).

Distribution: Southern Spain and France; outside Europe recorded from northern Africa (Algeria and Tunisia) (HUEMER & KARSHOLT, 2010).

Range in Italy: This record is the first for the Italian fauna (HUEMER & KARSHOLT, 2010).

Biology: The species prefers halophytic habitats; the larva was bred on *Arthrocnemum fruticosum* (L.) Moq. (= *Sarcocornia fruticosum* (L.) A. J. Scott) (Chenopodiaceae).

Scrobipalpa ocellatella (Boyd, 1858)

Material examined: 1 ♀, 7-V-1995; 1 ♀, 12-IX-2002, leg. OK *et al.*, gen. slide HH 3784 (ZMUC).

Distribution: Widely distributed from Portugal to Greece and southern Russia. Very local records from inland localities of central Europe. In the northwest, along the coasts of the Atlantic Ocean and North Sea from Ireland to Denmark. In the southern Mediterranean, recorded from the North Africa to the Middle East and Canary Islands (HUEMER & KARSHOLT, 2010).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 2010). In Sicily *S. ocellatella* is reported from Casteldaccia (Palermo) (MARIANI, 1938).

Biology: The larva has been recorded especially from *Beta vulgaris maritima* (L.) Arcang., and as a pest species on cultivated *Beta vulgaris* (L.) (Chenopodiaceae). Other host-plant records include *Halimione portulacoides* (L.) Aellen, *Suaeda maritima* (L.) Dumort., *S. vera* J. F. Gmeling in L., *Salicornia europaea* L. and *Camphorosma monspeliaca* L. (Chenopodiaceae) (HUEMER & KARSHOLT, 2010). The larva initially mines in the midrib; the leaves are later spun together with a silken web. Both the larva and the pupa have been reported as hibernating stages. In Europe, however, the larva may overwinter. Pupation takes place on the ground surface within a loose silken cocoon spun among debris. The voltinism varies, depending on climatic conditions; *S. ocellatella* occurs in up to five generations in the Mediterranean region and the Near East, whereas it is bivoltine in the northern regions of Europe (HUEMER & KARSHOLT, 2010).

Scrobipalpa monochromella (Constant, 1895)

Material examined: 3 ♀♀, 7-V-1995, 2 ♂♂, 4-VI-1995, 3 ♂♂, 1 ♀, 6-VII-1995, 1 ♀, 28-VIII-1995, 1 ♂, 28-XI-1995, 3 ♂♂, 1 ♀, 17-XII-1995; 2 ♂♂, 15-VI-1996, gen. slide HH 3820 (BELL), 1 ♂, 2 ♀♀, 14-VIII-1996, 4 ♂♂, 1 ♀, 15-IX-1996; 4 ♂♂, 3 ♀♀, 12-IX-2002, leg. OK *et al.*, gen. slide HH 3781 (ZMUC); 4 ♂♂, 24-IV-2006 leg. O. Karsholt (ZMUC).

Distribution: In Europe, only known from a few coastal localities in southern France and Italy. Recently recorded from Corsica, Ukraine and Siberia (HUEMER & KARSHOLT, 2010).

Range in Italy: Previously known only from the Tuscan region, the mouth of the Ombrone river and Principina a Mare (KARSHOLT & HUEMER, 1995). These are the first data from Sicily (HUEMER & KARSHOLT, 2010).

Biology: *S. monochromella* is restricted to halophytic habitats. The larva has been recorded

from *Limonium vulgare* Mill. (Plumbaginaceae). It feeds between spun leaves or as a leaf miner. The adults are active from sunset onwards and the species is later attracted to artificial light sources.

Scrobipalpa salinella (Zeller, 1847)

Material examined: 1 ♂, 7-V-1995, gen. slide HH 3797 (ZMUC), 4 ♂♂, 4-VI-1995, gen. slide HH 3819 (BELL), 1 ♂, 6-VII-1995, 3 ♂♂, 1 ♀, 29-X-1995, gen. slide HH 3821 ♂ (BELL), 3 ♂♂, 17-XII-1995, gen. slide HH 3796 (BELL); 1 ♂, 23-IV-1996, gen. slide HH 3795 (BELL), 2 ♂, 1 ♀, 15-VI-1996, gen. slide HH 3818 ♀ (BELL), 1 ♂, 14-VIII-1996; 1 ♂, 10-IX-2000, gen. slide HH 3817 (ZMUC); 3 ♂♂, 1 ♀, 12-IX-2002, leg. OK *et al.* (ZMUC).

Distribution: Widely distributed in the Mediterranean parts of Europe, but locally and mainly restricted to coasts and inland halophytic habitats. Outside Europe, known from North Africa, the Middle East and Mongolia (HUEMER & KARSHOLT, 2010).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 2010). In Sicily, *S. salinella* is reported from Syracuse, which is the type locality of the species (ZELLER, 1847; MINÀ-PALUMBO & FAILLA-TEDALDI, 1889; MARIANI, 1938).

Biology: The biology and host plants are imperfectly known due to confusion with closely related species. The moth is restricted to both coastal and inland halophytic habitats. The preferred host plant is *Arthrocnemum fruticosum* (L.) Moq. (Chenopodiaceae). In Portugal, it has been reared on *Arthrocnemum macrostachyum* (Moric.) C. Koch (Chenopodiaceae) where it feeds in stems and shoot tips (HUEMER & KARSHOLT, 2010).

Scrobipalpa spergulariella (Chrétien, 1910)

Material examined: 3 ♂♂, 1 ♀, 12-IX-2002, leg. O. Karsholt *et al.*, gen. slides HH 3787, 3788, 3817, 6357 (ZMUC).

Distribution: Only known from Spain, southern France, Greece, Crete and Tunisia (HUEMER & KARSHOLT, 2010).

Range in Italy: This record is the first for the Italian fauna (HUEMER & KARSHOLT, 2010).

Biology: The larva has been recorded from *Spergularia media* (L.) C. Presl (Caryophyllaceae). It is polyvoltine, appearing throughout the year (HUEMER & KARSHOLT, 2010).

Scrobipalpa instabilella (Douglas, 1846)

Material examined: 2 ♂♂, 15-VI-1996, gen. slide HH 3780 (BELL), 1 ♂, 1 ♀, 15-IX-1996, gen. slide HH 3799 ♀ (ZMUC).

Distribution: Widely distributed along the coasts of western Europe and in the western Mediterranean basin; from the eastern Mediterranean region only from mainland Greece. Also known from northern Africa to Palestine (HUEMER & KARSHOLT, 2010).

Range in Italy: Previously known from peninsular and insular regions (HUEMER & KARSHOLT, 1995; 2010). In Sicily, *S. instabilella* is reported from Casteldaccia (Palermo) (MARIANI, 1938).

Biology: Preferred habitats are coastal salt marshes. The young larva is a leafminer on *Halimione portulacoides* (L.) Aellen (Chenopodiaceae). In the laboratory, it also feeds on *Atriplex halimus* L.; *A. littoralis* L., *Salicornia europaea* L. (Chenopodiaceae), *Plantago coronopus* L. (Plantaginaceae), *Aster tripolium* L. (Asteraceae) and *Lycium barbarum* L. (Solanaceae) are also mentioned. The adult flies from early June to early September (HUEMER & KARSHOLT, 2010).

Scrobipalpa peterseni (Povolný, 1965) (Fig. 3)

Material examined: 2 ♂♂, 17-XII-1995, gen. slide GU 03/1183 Huemer (BELL, ZMUC).

Distribution: Recorded from Algeria, Tunisia and Saudi Arabia (HUEMER & KARSHOLT, 2010).

Range in Italy: The two Sicilian specimens are the only ones known from Europe.

Biology: Preferred habitats are coastal and inland salt marshes. Host plant and early stages

unknown. The adults have been collected in February and March and between August and December, probably occurring in several generations. Adult is attracted to light (HUEMER & KARSHOLT, 2010).

Scrobipalpa ergasima (Meyrick, 1916)

Material examined: 1 ♀, 12-IX-2002, leg. OK *et al.* (ZMUC).

Distribution: Mediterranean area including eremic regions of Africa to South Africa and south-eastern Asia and Japan. In Europe, present in Portugal, Spain, France, Corsica, Italy, Malta, Greece and Crete (HUEMER & KARSHOLT, 2010).

Range in Italy: Known from many peninsular regions, Sardinia and Sicily (HUEMER & KARSHOLT, 1995; 2010).

Biology: The larva is a leaf miner on various Solanaceae and has been recorded from *Hyoscyamus albus* L., *Solanum nigrum* L. and *S. melongena* L. It is considered a serious pest. Adults in several generations throughout the year (HUEMER & KARSHOLT, 2010).

Phthorimaea operculella (Zeller, 1873)

Material examined: 2 ♂♂, 17-XII-1995; 1 ♂, 15-IX-1996; 2 ♀♀, 12-IX-2002, leg. OK *et al.* (ZMUC).

Distribution: Neotropical species that has been introduced in many areas of the world. In Europe, mainly restricted to the southern parts; records from northern Europe are probably based on introduced material (the species cannot survive the winters); records from central Europe are exceptional (ELSNER *et al.*, 1999; HUEMER & KARSHOLT, 2010).

Range in Italy: Known from many peninsular regions, Sardinia and Sicily (MARIANI, 1938; HUEMER & KARSHOLT, 2010).

Biology: The species is widely known as Potato tuber moth and is considered a serious pest. The larva is a leaf miner on numerous Solanaceae such as *Solanum melongena* L., *S. dulcamara* L., *S. tuberosum* L., *S. nigrum* L., *Nicotiana glauca* R.C. Graham, *N. tabacum* L., *Lycopersicon esculentum* Mill. and *Lycium europaeum* L. (HUEMER & KARSHOLT, 2010).

Ephysteris promptella (Staudinger, 1859)

Material examined: 1 ♀, 12-IX-2002, leg. OK *et al.*, gen. slide gen. slide HH 3785 (ZMUC).

Distribution: Southern regions of Europe to southern Russia, southern and eastern Africa, Macaronesia, Indoaustralian regions and China (HUEMER & KARSHOLT, 2010).

Range in Italy: Known from many peninsular regions and Sicily (HUEMER & KARSHOLT, 1995; 2010). In Sicily, *E. promptella* is reported from Casteldaccia (Palermo) (MINÀ-PALUMBO & FAILLA-TEDALDI, 1889; MARIANI, 1938).

Biology: The larva feeds in the stems of the host plant (Poaceae), especially *Andropogon* L., *Oryza* L., *Panicum* L., *Saccharum* L., *Sorghum* Moench, *Stipa* L. and *Triticum* L. In subtropical and tropical areas, the adults occur in several generations (HUEMER & KARSHOLT, 2010).

Conclusion

We record 24 species of Gelechiidae from the Pantano Longarini salt marsh. This record is only a small part of the 120 species of this family recorded from Sicily in Fauna Europaea (KARSHOLT, 2011). Four of these species, however, are known in Italy only from this locality. Most species of Gelechiidae are found in dry habitats, but many members of the large genus *Scrobipalpa* feed as larvae on plants in salt marshes, and so the extensive representation of this genus in our material is no surprise.

The Pantano Longarini salt marsh is only one of several saline wetlands in southeastern Sicily, and many of the same species are expected to occur there, but a close investigation of these areas will also very likely find additional, highly interesting gelechiid species.

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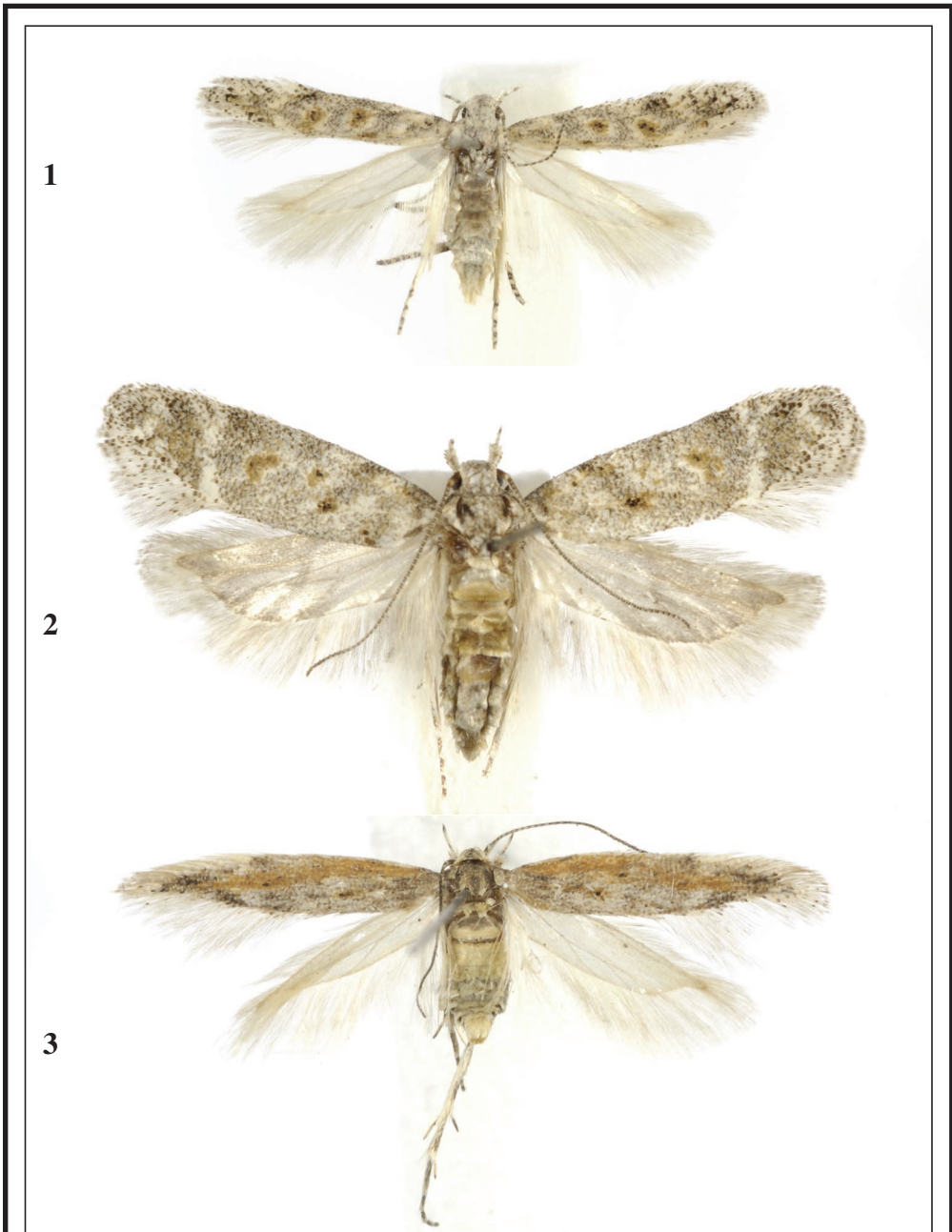
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Figs. 1-3.— Adults of *Scrobipalpa* spp. **1.** *S. bigoti* Povolný - ♂, Sicily, Pantano Longarini, 12-IX-2002, 8 mm; **2.** *S. bradleyi* Povolný - ♀, Sicily, Pantano Longarini, 12-IX-2002, 13 mm; **3.** *S. peterseni* (Povolný) - ♂, Sicily, Pantano Longarini, 17-XII-1995, 11 mm.